

## WHAT IS CLAIMED IS:

1. A light quantity correction method for an exposing device provided with a plurality of light emitting elements comprising steps of:

5 Step 1 where the exposing device is allowed to emit light in a plurality of light emission patterns, and quantity of light emitted from each light emitting element is measured for each light emission pattern;

10 Step 2 where a change rate of a light quantity distribution of the exposing device is calculated based on the light quantity measured for each light emission pattern; and

15 Step 3 where a correction value for the light quantity emitted from each light emitting element is calculated based on the light quantity measured in the Step 1 and the change rate of the light quantity distribution calculated in the Step 2.

2. A light quantity correction method for the exposing device according to claim 1, wherein the plurality of light emission patterns include:

a first pattern where only one of all the light emitting elements of the exposing device is turned on; and

25 a second pattern where all the light emitting elements of the exposing device are turned on.

3. A light quantity correction method for the exposing

device according to claim 2, wherein plural times of light quantity measurement are conducted for the second pattern in the Step 1.

- 5 4. A light quantity correction method for the exposing device according to claim 3, wherein focus position of the light emitting elements is shifted every time for the plural times of light quantity measurements for the second pattern.

- 10 5. A light quantity correction method for the exposing device according to claim 1, wherein

a plurality of correction values of the light quantity for each of the light emitting elements are calculated in the Step 3, and

- 15 the method includes a further step of selecting a correction value to be used for light quantity correction of the exposing device among the plurality of correction values.

- 20 6. A light quantity correction method for the exposing device according to claim 5, wherein the plurality of light emission patterns include:

a first pattern where only one of all the light emitting elements of the exposing device is turned on; and

- 25 a second pattern where all the light emitting elements of the exposing device are turned on.

7. A light quantity correction method for the exposing device according to claim 6, wherein plural times of light quantity measurement are conducted for the second pattern in the Step 1.

5

8. A light quantity correction method for the exposing device according to claim 7, wherein

a plurality of change rates relating to light quantity distribution of the exposing device are calculated in the Step 2, and

10

a plurality of correction values of the light quantity for each of the light emitting elements are calculated in the Step 3 based on the plurality of change rates obtained in the Step 2.

15

9. A light quantity correction method for the exposing device according to claim 7, wherein focus position of the light emitting elements is shifted every time for the plural times of light quantity measurements for the second pattern.

20

10. An image forming device comprising:

an exposing device provided with a plurality of light emitting elements; and

a controller for conducting process including the following steps:

25

Step 1 where the exposing device is allowed to emit light in a plurality of light emission patterns, and

quantity of light emitted from each light emitting element is measured for each light emission pattern;

Step 2 where a change rate of a light quantity distribution of the exposing device is calculated based on the light quantity measured for each light emission pattern; and

Step 3 where a correction value of the light quantity emitted from each light emitting element is calculated based on the light quantity measured in the Step 1 and the change rate of the light quantity distribution calculated in the Step 2.

11. An image forming device according to claim 10 wherein the plurality of light emission patterns include:

a first pattern where only one of all the light emitting elements of the exposing device is turned on; and

a second pattern where all the light emitting elements of the exposing device are turned on.

12. An image forming device according to claim 11, wherein the controller conducts plural times of light quantity measurements for the second pattern.

13. An image forming device according to claim 12, wherein the controller shifts focus positions of the light emitting elements every time to conduct the plural times of light quantity measurements for the second pattern.

14       An image forming device according to claim 10,  
wherein the controller calculates a plurality of correction  
values of the light quantity for each of the light emitting  
5 elements and selects a correction value to be used for light  
quantity correction among the plurality of correction  
values.

15.       An image forming device according to claim 14,  
10 wherein the plurality of light emission patterns include:  
          a first pattern where only one of all the light  
emitting elements of the exposing device is turned on; and  
          a second pattern where all the light emitting  
elements of the exposing device are turned on.

15       16.       An image forming device according to claim 15,  
wherein the controller conducts light quantity measurement  
for the second pattern plural times.

20       17.       An image forming device according to claim 16,  
wherein the controller calculates a plurality of change  
rates relating to light quantity distribution of the  
exposing device and further calculates a plurality of  
correction values of the light quantity for each of the light  
25 emitting elements based on the plurality of change rates.

18.       An image forming device according to claim 16,

wherein the controller shifts focus positions of the light emitting elements every time to conduct the plural times of light quantity measurements for the second pattern.

- 5 19. A light quantity correction method for an exposing device provided with a plurality of light emitting elements comprising steps of:

Step 1 where an exposing device is allowed to emit light to form an optical pattern;

- 10 Step 2 where the optical pattern formed in the Step 1 is read; and

Step 3 where a correction value of light quantity for each light emitting element is calculated based on data read in the Step 2,

- 15 wherein the optical pattern is constituted by a plurality of patterns having gradations different from each other.

- 20 20. A light quantity correction method for the exposing device according to claim 19, wherein the optical pattern is formed on a recording medium.

21. A light quantity correction method for the exposing device according to claim 19, wherein the optical pattern  
25 includes a mark to indicate positional information.

22. A light quantity correction method for the exposing

device according to claim 19 including a further step where data read in the Step 2 is subjected to smoothing.

23. An image forming device comprising:

5 an exposing device provided with a plurality of light emitting elements;

an image forming station for allowing the exposing device to emit light to form an optical pattern;

a reader for reading the optical pattern formed by  
10 the image forming station; and

a controller for conducting process of calculating a correction value of light quantity for each light emitting element based on data read by the reader,

wherein the optical pattern is constituted by a  
15 plurality of patterns having gradations different from each other.

24. An image forming device according to claim 23,  
wherein the image forming station forms the optical pattern  
20 on a recording medium.

25. An image forming device according to claim 24,  
wherein the controller conducts process of eliminating moisture on the recording medium before forming the optical  
25 pattern.

26. An image forming device according to claim 23,

wherein the optical pattern includes a mark to indicate positional information, and the controller obtains positional information based on the mark read by the reader and corrects reading magnification of the reader based on the thus obtained positional information.

27. An image forming device according to claim 23, wherein the controller conducts smoothing for data read by the reader and calculates the correction value of the light quantity for each light emitting element based on data obtained after smoothing.

28. An image forming device according to claim 27, wherein the controller conducts smoothing in a direction the same as an optical pattern forming direction of the image forming station.

29. An image forming device according to claim 23, wherein the controller outputs the data read by the reader to the outside of the image forming device and obtains correction value of light quantity for each light emitting element from the outside of the image forming device, instead of calculating the correction value based on the data read by the reader.

30. An image forming device according to claim 23, wherein the reader reads the optical pattern in a direction



perpendicular to a direction in which the image forming station forms the optical pattern.